

INTRODUCTION



The purpose of this chapter is to summarize local, state, and federal agency and organizational commitment to protect and improve the quality of surface and ground water through the management of land disposal activities across Tennessee. This will include identifying non-regulated problems, prioritizing problems, increasing partnership participation, and developing interest in creating demonstration projects. This chapter is subdivided for clarity, so that the

issues involved with failing septic systems can be discussed separately from the issues involving landfills and other solid waste application to the land.

- Municipal/Industrial waste applications
 - Soil chemistry analysis
 - Proper storage of waste
 - Proper spreading of waste
 - Assessment of water quality to ensure protection
 - Public awareness & education
- Public awareness & education
 - Creation & distribution of educational materials for all land disposal types
 - Brochures & pamphlets
 - Videos
 - CD-ROMs
 - Internet sites
- Failing pre-law landfills
 - Determination of location
 - GIS tracking
 - Prioritization according to water quality
 - Determination of appropriate entity for cleanup
 - Site cleanup
- Illegal dumpsites
 - Support of citizens and local officials
 - Determination of location
 - GIS tracking
 - Prioritization according to water quality
 - Site cleanup
 - Public awareness & education
- Abandoned/mismanaged salvage yards
 - Determination of location
 - GIS tracking
 - Determination of appropriate entity for cleanup
 - Site cleanup



Failing Septic Systems

DESCRIPTION

Failing septic systems are found randomly scattered throughout the state often involving a small area, a remote location, or just a few landowners. Often, the actual source of the problem is difficult to determine without an expensive and time-consuming reconnaissance study. And, in many cases, simply determining which state agency has jurisdiction over the pollution problem might be difficult. In such cases, this problem needs to be addressed and followed up with appropriate remediation efforts and monitoring.

EXTENT OF PROBLEM

Pollutants from failing septic tank systems enter streams and degrade water quality. Failing septic systems impact 11 out of the 352 streams listed on the 1998 303 (d) List. The following list is a compilation of these streams, which will be the targets of remediation efforts through 319 funds or other state or federal funding sources. The following list is a portion of the 1998 303(d) List which includes only the streams affected by failing septic systems. See Appendix C for the complete 1998 303(d) List.

WATERSHED NAME	IMPACT
8-digit HUC - Cumberland River	
South Fork-Pine Cr.	Septic systems
8-digit HUC - Tennessee River	
Upper French Broad R.-Big Cr.	Septic systems
Little Pigeon R.	Septic systems
Little Pigeon R.-W. Prong	Septic systems
Little Pigeon R.-W. Prong-Walden Cr.	Septic systems
Little Pigeon R.-W. Prong-Dudley Cr.	Septic systems
Little R.-Crooked Cr.	Septic systems
Lower Clinch R.-Coal Cr.	Septic systems
Hiwassee R.-Cane Cr.	Septic systems
Guntersville Res.-Big Fiery Gizzard Cr.	Septic systems
Big Sandy R.-W. Sandy Cr.	Septic systems

SOLUTIONS

The following is a listing of Best Management Practices(BMPs) that can be used to solve failing septic tank problems:

- Investigation of complaint files at county health departments
- Infrared imagery to determine problem areas
- On the ground surveys to verify problem areas
- Low Pressure Pipe systems (LPPs)
- Septic Tank Effluent Pump (STEP) systems
- STEP systems with recirculating sand filters for treatment
- Artificial wetlands



- Mound systems
- Adoption of Building ordinances
- Education of contractors and the public

Currently, the TDA-NPS Program is:.

- entering into contract with the City of Maryville to build a Septic Tank Effluent Pump (STEP) system just outside of the city limits to remediate septic system failures in a twenty-five unit housing development. Many county officials from the surrounding region will observe this project, and
- planning a 319 project to demonstrate the benefits of artificial wetlands when combined with conventional septic systems servicing homes and schools. Many county officials from the surrounding region will observe these BMPs.

COOPERATING PARTNERS

Partners

County Executive offices
County Health Departments
Development Districts
Local watershed associations and citizens groups
Public Lands
Tennessee Department of Environment and Conservation
 Division of Community Assistance
 Division of Ground Water Protection
 Division of Water Pollution Control
Tennessee Home Builders Association
Tennessee Resource Conservation and Development Districts
UT County Technical Assistance Service
UT Institute of Agriculture
UT-Municipal Technical Advisory Service

Abbreviations

TDEC
-DCA
-GWP
-WPC
THBA
TNRC&D
UT-CTAS
UTIA
UT-MTAS

The following text defines the programs that deal with septic/sewage system issues.

County Executive Offices

County and municipal governments, across the entire state, will be introduced to such systems or modified systems using wetlands, sand filters, and mounds in the next several years through local 319 demonstration projects. It is hoped that the local governments will employ such systems to abate existing problems and in future developments in an effort to reduce and eliminate water pollution.

County Health Departments

Local county health departments are responsible for tracking septic system failures and are also held accountable by the public for resolving the problems. More innovative methods of disposing of human waste are needed. STEPs, LPPs, mounds, and artificial wetlands are methods that may be used. By forming partnerships with TDEC-GWP, TDA-NPS Program, and local groups, these types of projects can be initiated to remediate the existing problems and to prevent new problems from occurring.



Development Districts

Nine (9) development districts exist across Tennessee to promote and assist in the growth of the areas they control. These districts have a vested interest in promoting clean water because future residents are more likely to move to their area if they know clean, usable water is readily available.

As growth continues in an area, the most suitable land for housing is acquired, leaving only marginal lands for further growth. This can cause stagnation in the growth of the area unless knowledgeable district partners from water quality agencies find means in which to establish needed housing sites. A good example of this is the use of the STEP system in areas where TDEC-GWP has designated the land as being marginal for single home septic system use. In addition, older existing facilities exhibiting septic system failure, such as schools, churches, and places of business, can be renovated through the use of STEPs, thereby revitalizing these facilities. This in turn can make the local community more attractive to development while assuring the existence of cleaner water.

Local watershed associations and citizens groups

These groups may help protect water quality from the impacts of failing septic systems by being the first to notice problems and notifying the proper authorities.

Public Lands

These agencies and their lands, listed below, may own facilities which are serviced by septic systems. The agencies are aware of the proper installation and maintenance of such systems and are willing to remediate any water quality related problems that might develop. By doing so, these agencies comply with the intentions of the TDA-NPS Program.

US Dept. of Defense-Army
Holston Ordnance Works
Volunteer Ordnance Works
Milan Arsenal
US Dept. of Defense-Air Force
Arnold Engineering Development Center
Ft. Campbell Military Reservation
Millington Airbase
US Dept. of Interior-Park Service
Cumberland Gap Historical Park
Great Smoky Mts. National Park
Big South Fork National River and Recreational Area
Chickamauga National Military Park
Stones River National Battlefield
Ft. Donelson National Military Park
Meriwether Lewis National Monument
Shiloh National Military Park
Natchez Trace National Parkway
US Dept. Agriculture-Forest Service
Cherokee National Forest
Land Between the Lakes National Forest
US Dept. of Energy



Oak Ridge National Laboratories

TDEC- Division of Community Assistance State Revolving Fund (SRF)

The SRF allows the states to issue low interest loans to municipal governments across Tennessee. The loans have primarily been used to fund the building or improvement of municipal wastewater treatment and collection systems. Recently, SRF funding guidance has encouraged the use of the SRF to address nonpoint source projects.

TDEC-Division of Ground Water Protection (TDEC-GWP)

Since the late 1980's, TDEC-Division of Ground Water Protection (TDEC-GWP) has been actively ensuring that all new residential and business units meet the septic system requirements established by state law. This has been a significant effort to help prevent pollution in receiving surface and subsurface water resources.

Yet, many septic systems were constructed prior to the law. There are about 7,000 permits per year to correct failing systems due to a variety of reasons. TDEC-GWP performs septic system failure surveys of communities upon request in order to provide these communities with the data they must have in order to acquire funding for new systems or a multi-unit system.

Through partnerships with EPA, TDA-NPS Program, TVA, local county governments, and others, TDEC-GWP will be able to discern which housing developments are causing pollution problems, through the use of the 1998 303(d) List and infrared imaging. (TVA has done considerable amounts of infra-red work in the Valley.) After determining where the problems are, they should be corrected as soon as possible. Currently, TDEC-GWP is working in close partnership with the Chickasaw-Shiloh RC&D Council, local county governments, citizens, and TDA-NPS Program to establish a 319 project in southwest Tennessee, involving innovative treatment technologies.

TDEC-Division of Water Pollution Control (TDEC-WPC)

WPC monitors the water quality of all Tennessee's waters through the five-year rotating watershed approach. This program identifies waters impaired by pollutants, including those from failing septic tanks.

Tennessee Homebuilder's Association (THBA)

The THBA is an association of home building companies with chapters in Middle, East and West Tennessee. In recent years, they have teamed up with the City of Chattanooga to host certification workshops. The THBA will continue to work together with city and county organizations to ensure that local codes require all new homes be built with properly designed and installed septic systems.

Tennessee Resource Conservation and Development Districts (TNRC&D)

The RC&Ds promote environmentally sound development in their areas and have worked with the TDA-NPS Program on several water quality projects. The issue of waste water disposal is one of many topics that may be addressed by the RC&Ds with the help of partner agencies.

UT County Technical Assistance Service (CTAS)

The CTAS was created by the Tennessee General Assembly in 1973 at the urging of county officials. It is an agency of the University of Tennessee Institute for Public



Services. CTAS has been the primary technical assistance service group for the state's 95 counties whose mission is to promote better government by assisting county officials in developing and implementing ideas and methods for improving service to county citizens. CTAS will be a strong partner in coordinating the statewide efforts concerning the problem of failing septic tank systems.

UT Institute of Agriculture (UTIA)

The UTIA has for many years recognized the fact that human waste, in addition to animal waste, significantly contributes to the pollution of both surface and subsurface water resources across the state. UTIA has participated in well water monitoring at one location in Bedford County, in an effort to determine the origin of high fecal and nutrient loadings to local surface streams and subsurface aquifers. In addition, UTIA installed a demonstration Low Pipe Pressure system in Bedford County and monitored to test its effectiveness. They created a video and fact sheet with information about this project. Local UTIA staff provides public awareness information to the community. UTIA provides assistance in proper maintenance of septic systems as well as other human activities on the farm and homestead, thereby reducing the impact on the quality of local water resources.

UT Municipal Technical Advisory Service (UT-MTAS)

MTAS was created in 1949 by the state legislature to enhance the quality of government in Tennessee municipalities. An agency of the University of Tennessee Institute for Public Services, MTAS works in cooperation with the Tennessee Municipal League to assist municipal officials with issues such as sewage collection and treatment. MTAS will be instrumental in the education of municipal officials concerning solutions to the problem of failing septic tank systems.

OTHER FUNDING SOURCES

The State Revolving Fund (SRF) is managed by TDEC's Division of Community Assistance (DCA). This agency has expressed the desire to expand its funding to lower cost projects found within the nonpoint source water pollution arena. Several meetings have been held between DCA, WPC and the TDA-NPS Program to learn more of what can be done to direct SRF funding towards nonpoint source issues.

The Tennessee Department of Economic and Community Development administers the Community Development Block Grant Program in Tennessee. This program provides grant funding to municipal governments to fund wastewater infrastructure projects. One of the central criteria for a project being eligible for funding is the documented failure rate of septic systems in the proposed project area. Contacts can be made with this department to coordinate projects so common goals can be achieved.

Additional funding sources for environmental projects are listed in the Catalog of Federal Funding, which can be found at: www.aspe.os.dhhs.gov/cfda

CURRENT 319 PROJECTS

FY-96	Constructed Wetlands Project	McNairy County
FY-99	Septic Tank Effluent Pump System	City of Maryville



AREAS FOR PROGRAM EXPANSION

Failing Septic Systems

The total number of failing septic systems across Tennessee should be known. This can be accomplished through surveys conducted county by county, as well as with aerial imaging technologies. With this information the TDA-NPS Program along with the LDWG can more precisely plan remediation and demonstration projects.

Promotion of State Revolving Funds in BMP implementation

As the SRF Program is looking for projects beyond the normal scope of building large waste treatment plants it would be advantageous for this program to assist individuals or organizations who had developed interest in implementing a wide array of land disposal BMPs. Perhaps county governments and/or development districts could intervene in behalf of the landowners, under certain circumstances, to help solve their problem.

WATER QUALITY MONITORING & ASSESSMENT

TDEC-Division of Water Pollution Control

Currently, 319 funds are being awarded to TDEC-WPC to increase the density and aerial extent of nonpoint source area coverage in their water quality monitoring scheme. As land disposal related sites are found and delineated as having water quality impairment possibilities the TDEC-WPC monitoring effort should focus on these sites to determine their effects on water quality. If it is proven that these sites do cause impairment BMP implementation should occur and follow-up monitoring should proceed to determine if this effort was sufficient in negating the original impact of the land disposal site. These efforts should be coordinated between TDEC-WPC and the implementing agency. TDEC-WPC is responsible for addressing water quality problems via State of Tennessee Rule 1200-4-3.

TDEC-Division of Water Supply

The Ground Water Management Section of TDEC's Division of Water Supply (TDEC-DWS) has been charged with the responsibility of managing the Source Water Assessment Program (SWAP). Through these efforts, a contract has been made with the Tennessee Association of Utility Districts (TAUD) to complete reconnaissance surveys of every public and private water intake site in the state. Information gathered during these surveys consists of any point and/or nonpoint sources of water pollution. This information is recorded for GIS storage and presentation and can be used by local and state entities in projects related to illegal dumpsites, abandoned landfills, failing septic systems, abandoned salvage yards, and incidences of improperly spread municipal and/or animal waste.

ENFORCEMENT MECHANISMS

Tennessee Department of Environment and Conservation is comprised of several divisions, four of which are assigned the task of regulating many land disposal activities. The following text highlights the enforcement responsibilities of these divisions.



TDEC-Division of Ground Water Protection

TDEC-GWP is given the responsibility for regulating subsurface sewage disposal systems through the State of Tennessee Rule 1200-1-6 and TCA 68-221-401-414. Since the 1980's, TDEC-GWP has been actively ensuring that all new residential and business units meet the septic system rules promulgated in response to state law. Stringent rules are enforced, through rigorous pre-construction inspections, to ensure that newly constructed units are equipped with septic systems which are established in percolating soils with enough volume to effectively treat the effluent produced by the associated dwelling or business.

TDEC-Division of Water Supply

Currently there are no programmatic mandates which allow TDEC-DWS to regulate any non-regulatory pollution causing activities found within the SWAP assessed areas. Any remediative efforts will need to be funded and performed through local partnerships. TDEC-DWS is responsible for enforcing drinking water regulations through the State of Tennessee Rule 1200-5-1.

TDEC-Division of Water Pollution Control

TDEC-WPC is also responsible for responding to public water quality complaints which could arise from failing septic/sewage system activities and attempt to independently find these problems during the course of their assessment efforts. Once violations to the state's water quality law have been discovered by TDEC-WPC, enforcement procedures against the operator or landowner are enacted to remedy the problem. TDEC-WPC is responsible for enforcing water quality regulations through State of Tennessee Rule 1200-4-3 and the Tennessee Water Quality Control Act.

Division of Solid and Hazardous Waste Management

Information regarding solid waste processing and disposal (including landfills) is available from the Division of Solid/Hazardous Waste Management. Hazardous waste generation, recycling, storage, transportation, treatment and disposal within Tennessee is also regulated by this Division.

MEASURES OF SUCCESS

- increase in the number of failing septic system assessments
- increase in the publication of educational materials related to groundwater issues
- decrease in the streams listed on the 303(d) List because of septic/sewage system issues.
- special session held each year at the Partnership Conference concerning groundwater pollution issues.

MILESTONES

Long Term Goal 1.

Hold regularly scheduled meetings with stakeholders, to create new partnerships, to strengthen existing partnerships, and to foster greater trust, commitment and accountability.

- **Action 1:** The Land Disposal Working Group (LDWG) will meet semi-annually.
Lead: TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2001 – 2005
- **Action 2:** Increase LDWG membership by one member each year.
Lead: TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2001 – 2005
- **Action 3:** Establish the LDWG mission statement, a list of collective capabilities, and priorities for funding.
Lead Agencies: LDWG and TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2001-2005
- **Action 4:** Develop Memoranda of Agreement with key federal agencies to improve programmatic consistency.
Lead: TDA-NPS Program
Key Partners: All federal agency partners
Year(s): 2001-2005

Long Term Goal 2.

Fully implement all developed TMDLs for nonpoint sources in compliance with existing regulations, policies, or agreements by 2015.

- **Action 1:** Coordinate water quality remediation efforts between TDEC-WPC and TDA-NPS Program with the development of Land Disposal-related TMDLs, researching a unified approach in setting TMDL standards.
Lead: TDEC-WPC & TDA-NPS Program
Key partners:
Year(s): 2001
- **Action 2:** Provide information concerning TMDL development to the LDWG, to gain their participation.
Leads: TDA-NPS Program, TDEC-WPC
Key Partners: LDWG
Year(s): 2001-2005



- **Action 3:** Provide necessary input to TDEC-WPC concerning nonpoint issues on 100% of waters selected for TMDL development.
Leads: TDA-NPS Program, TDEC-WPC
Key Partners: LDWG
Year(s): 2001-2005
- **Action 4:** Create an implementation plan for any TMDL developed by TDEC-WPC involving pollutants originating from Land Disposal nonpoint sources.
Leads: TDA-NPS Program, TDEC-WPC
Key Partners: LDWG
Year(s): 2001-2005

Long Term Goal 3.

Restore all waters impaired by nonpoint sources that are listed on the 1998 303(d) List to the condition of fully supporting their designated uses by 2015, in cooperation with local, state and federal partners.

- **Action 1:** Install BMPs so that 20% of the streams impaired due to failing septic systems on the 1998 303(d) List will support their designated uses.
Lead: TDEC-WPC
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2005
- **Action 2:** Install BMPs so that 60% of the streams impaired due to failing septic systems on the 1998 303(d) List will support their designated uses.
Lead: TDEC-WPC
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2010

Long Term Goal 4.

Beginning in 2006, through regulatory and non-regulatory means, prevent previously unlisted waters from being included on the 303(d) List because of nonpoint source impairments.

- **Action 1:** Implement BMPs on streams not listed on the 1998 303(d) List
Lead: LDWG & TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TN
Year(s): 2001-2005
- **Action 2:** Provide funding to projects that will keep waters from being 303(d) Listed due to failing septic systems.
Lead: TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2005

Long Term Goal 5.

Improve the knowledge of stakeholders and citizens concerning the origins, magnitude, and prevention of nonpoint source pollution, and how to prevent it.



- **Action 1:** Develop and distribute educational material concerning failing septic system issues in increasing amounts each year.
Lead: TDA-NPS Program
Key partners: LDWG
Year(s): 2001-2005
- **Action 2:** Through 319 demonstration projects across the state, encourage local entities to create projects to remediate improper failing septic systems sites which are affecting local water quality.
Lead: TDA-NPS Program
Key partners: LDWG
Year(s): 2001-2005
- **Action 3:** Provide educational information concerning failing septic systems on the TDA-NPS web page.
Lead: TDA-NPS
Year(s): 2001

Long Term Goal 6.

Through the process of continuous improvement, routinely assess all programmatic functions of the TDA-NPS Program in order to maximize efficiency, decrease the bureaucratic burden and increase the numbers of participants in the program.

- **Action 1:** Investigate other funding sources such as The Nature Conservancy, Brownfields Program, as well as EPA.
Lead: TDA-NPS Program
Key partners: The Nature Conservancy; US EPA
Year(s): 2001-2005
- **Action 2:** Provide responses to all project related inquiries from grantees within three business days of the request.
Lead: TDA-NPS Program
Year(s): 2001-2005
- **Action 3:** Work with grantees to achieve timely submittal of all progress reports 100% of the time.
Lead: TDA-NPS Program
Year(s): 2001-2005
- **Action 4:** Request feedback from partners annually to assess the quality of the TDA-NPS Program
Lead: TDA-NPS Program
Year(s): 2001-2005

Long Term Goal 7.

Use the maximum allowable percentage of funding annually to assist partners with water quality monitoring and assessment, for the duration of the 319 program.

See Chapter 1.9 for action items related to water quality monitoring for the TDA-NPS Program



Landfills, Pesticide Management and Solid Waste Land Application

EXTENT OF PROBLEM

Six (6) out of the 352 waterbodies listed on the 1998 303(d) List generated every two years by TDEC-WPC, have been impacted or impaired by landfills. Fourteen (14) have been contaminated with pesticides. The following list is a compilation of these streams, which will be the targets of remediative efforts through 319 funds or other state or federal funding sources. Below is a portion of the 1998 303(d) List which includes the streams affected by landfills and pesticides:

WATERSHED NAME	IMPAIRMENT
8-digit HUC – Duck River	
Old Hickory L.-Spring Cr.	Landfill
So. Harpeth R.	Landfill
Red R.-Poorhouse Br.	Landfill
Upper Duck R.-Thompson Cr.	Landfill
Lower Duck R.-Sugar Cr.	Landfill
Upper Kentucky Res.-Beech Cr..	Landfill
Sugar Creek	Pesticides
8-digit HUC – Lower Cumberland Basin	
Seven Springs Cr.	Pesticides
8-digit HUC – Mississippi River	
Miss. R.-Loosahatchie R.	Pesticides
McKellar Lake	Pesticides
Miss. R.-Loosahatchie R., Hatchie R.	Pesticides
Miss. R.-Loosahatchie R., Obion R.	Pesticides
Miss. R.-Obion R. to KY state line	Pesticides
Miss. R. Bessie Bend area	Pesticides
Wolf River Harbor	Pesticides
Loosahatchie R.-Big Cr.	Pesticides
Loosahatchie R.-Big Cr., Cypress & Oliver	Pesticides
Wolf River-Fletcher Cr., Harrington Cr.	Pesticides
Wolf River-Fletcher Cr. to Hwy. 177	Pesticides
Lower Nonconnah Cr.-Cold Cr.	Pesticides

SOLUTIONS

The solutions to the impairments listed on the 1998 303(d) List referenced above involve the coordination of TDEC-SWM and TDEC-DCA and TDA-Reg. Services. Additionally, a determination needs to be made on each waterbody, about the exact source of the impairment. If the landfill causing the impairment is a permitted landfill, then the solution to this impairment will be to enforce the provisions of the permit.

Concerning pesticide contamination, many of the waterbodies listed are segments of the mainstem of the Mississippi River. Pollutant sources could be from sources other than those located in Tennessee.



Many streams have localized impairments to water quality from illegal dumpsites located near by the stream. Projects have been funded by TDA-NPS Program to address this problem as a means of preventing streams from becoming listed.

The land application of Solid Waste including Municipal Bio-solids has not been shown to cause any impairment to waters of Tennessee. These activities are regulated by TDEC-SWM and WPC respectively. The pollution of water resources is highly unlikely due to the strict guidelines in place.

COOPERATING PARTNERS

Partners

Agrichemical manufacturers
 Appalachian RC&D Council
 Austin Peay State University
 Brownfields Program
 Clinch - Powell RC&D Council
 Development Districts
 Keep America Beautiful chapters
 Keep Blount Beautiful
 Keep Tennessee Beautiful Program/Univ. of Memphis
 Local watershed associations and citizens groups
 Public Lands
 Soil Conservation Districts
 Tennessee Agricultural Production Association
 Tennessee Department of Agriculture
 Ag. Resources Conservation Fund
 Regulatory Services
 Tennessee Department of Environment and Conservation
 Division of Community Assistance
 Division of Solid Waste Management
 Division of Water Supply
 Division of Water Pollution Control
 Tennessee Department of Transportation
 Tennessee Farmers Cooperative
 Tennessee Golf Course Superintendent's Association
 Tennessee Nurserymen's Association
 Tennessee Resource Conservation and Development Councils
 Buffalo - Duck River RC&D Council
 Chickasaw - Shiloh RC&D Council
 Five Rivers RC&D Council
 Hull - York Lakeland RC&D Council
 Smoky Mt. RC&D Council
 Southeast TN RC&D Council
 Pesticide Management Program
 Tennessee Technological University
 Tennessee Valley Authority
 USDA-Natural Resources Conservation Service

Abbreviations

Appal. RC&D
 APSU

 C - P

 KAB
 KBB
 KTB

 SCDs
 TAPA

 ARCF
 RS
 TDEC
 DCA
 SWM
 DWS
 WPC
 TDOT
 TFC
 TGCSA
 TNA
 TNRC&D
 B - DR
 C - S
 Five Rivers
 H - YL
 SMRC&D
 SETN
 PMP
 TTU
 TVA
 NRCS



UT Agricultural Extension Service
UT Center for Industrial Services
UT Experiment Station
UT County Technical Assistance Service
UT-Municipal Technical Advisory Service

UTAES
UT-CIS
UTES
UT-CTAS
UT-MTAS

The following text defines the programs that deal with landfills and solid waste issues.

Agrichemical manufacturers

Certain pesticide manufacturers participated in the program by being involved in the Model Site pesticide handling and mixing Demonstration facilities. Others requested technical assistance from TDA regarding regulatory compliance prior to construction of new facilities.

Appalachian Resource Conservation and Development Council (App-RC&D)

The Appalachian RC&D developed and administered the Nolichucky River Pesticide Awareness Project. As part of that project, they constructed at least two permanent facilities for the collection of plastic farm chemical containers for recycling, trained employees of farm stores in chemical safety and employed them as inspectors, and provided special labeling for pesticides which reminded farmers to triple rinse and recycle these containers. They also developed and distributed flyers and posters and a tabletop display for information/education and held presentations for farmers. This project was funded in part by 319 funds.

Through a 319 project, the Appalachian RC&D Council has partnered with other local entities to construct a centrally located pesticide container recycling center in northeast Tennessee. This facility was relatively inexpensive to build and maintain. Yet, more importantly, it will provide considerable recycling benefits for the local community as well as serve as a means of keeping hazardous substances from entering local waterbodies through sinkholes and streams. The seven (7) remaining RC&D Councils need to follow this lead in creating demonstration facilities across the state in an attempt to provide the impetus for even more facilities completely funded by local sources.

Austin Peay State University (APSU)

APSU and TDA-RS conducted a study of groundwater quality in the shallow vadose zone in the West Sandy Watershed. This project was partially funded with 319 funds. UTAES provided assistance in site selection and technical design. APSU was responsible for monitoring nutrients and pesticides after storm events, evaluating data, analyzing statistics, and sponsoring demonstrations to discuss the results and farm management implications with local farmers.

Brownfields Program

The Brownfields Program is an EPA program that directs funding towards cleaning up abandoned industrial sites that are not eligible for Superfund. The problems associated with abandoned industrial sites include solid waste or even landfills associated with an industry. Pollutants from these sites may include metals, chemicals, bacteria or nutrients.



Clinch-Powell RC&D Council (CP-RC&D)

Yet another example of locally led illegal dumpsite cleanup efforts is the FY-97 319 funded Clinch-Powell Illegal Dumpsite project in northeast Tennessee. This remote area has been without nearby sanitary landfill facilities for many years. Thus many illegal dumpsites were created out of necessity. Recent RC&D Council and other local entity efforts have created several convenience centers for dumping purposes as well as initiated the inventory, prioritizing, and cleaning up of several illegal dumpsites in this five county area. TDA-NPS Program needs to partner with the remaining seven RC&D Councils and KABs across the state to initiate other such water quality projects.

Development Districts

Nine (9) development districts exist across Tennessee to promote and assist in the growth of the areas they control. These districts have a vested interest in promoting clean water in the fact that future residents are more likely to move to their area if they know clean, usable water is readily available.

Keep America Beautiful (KAB affiliates)

Many litter cleanup campaigns have been completed in twenty-five (25) counties and six (6) cities by KAB staff members across Tennessee. This level of activity represents a strong stewardship for the environment and is a potential project partner by TDA-NPS Program.

The TDA-NPS Program has approached these KAB affiliates through Keep Tennessee Beautiful. Discussions to enlist their valuable support in land disposal related projects have taken place. A good example of this has been the submittal of the Duck River Illegal Dumpsite Inventory and Cleanup project which will be partially supported through FY-2000 Base 319 funds. This three part project will encompass citizen groups and KAB affiliates of five (5) Middle Tennessee counties with inventory and GIS tracking of all illegal dumps, prioritize eventual cleanup sites based upon their degree of water quality impact to local waterbodies, and the actual remediation of at least one (1) site per county.

Keep Blount Beautiful (KBB)

Several years ago Keep Blount Beautiful (KBB), initiated an illegal dumpsite inventory and cleanup project in the face of rising tipping fees. Citizenry involvement was gained at the outset, there was full support of dumpsite clean up and there was no increase illegal dumping to avoid paying a tipping fee. Eventually, some twenty-seven (27) sites were cleaned up, none of which have been illegally reused.

Keep Tennessee Beautiful Program/Univ. of Memphis (KTB)

Through a TDOT grant, Keep Tennessee Beautiful (KTB), formerly known as the Clean Tennessee Program, has been coordinating with 25 KAB affiliates to initiate litter clean-up projects. This program, housed at the University of Memphis (UM), has been in progress for several years, while its great success has landed them a spot on the governor's TLG Program.

Local watershed associations and citizens' groups

These groups become ambitious enough to adopt water quality projects as demonstrated by the biannual lake cleanup projects of the Boone Lake Association. Such associations can reduce the water quality impact of land disposal related pollutants



as they sponsor illegal dumpsite inventorying and cleanups, litter cleanups, and education/public awareness efforts in their areas.

The TDA-NPS Program should make every effort to strengthen existing ties with these local groups as well as initiate ties with newly created associations. On many occasions, these groups are a great source of voluntary workers to complete 319 projects.

Public Lands

Several federal agencies own property, yet are not considered water quality or funding agencies per se.. By doing so, these agencies comply with the intentions of the TDA-NPS Program.

- US Dept. of Defense-Army
 - Holston Ordnance Works
 - Volunteer Ordnance Works
 - Milan Arsenal
- US Dept. of Defense-Air Force
 - Arnold Engineering Development Center
 - Ft. Campbell Military Reservation
 - Millington Airbase
- US Dept. of Interior-Park Service
 - Cumberland Gap Historical Park
 - Great Smoky Mts. National Park
 - Big South Fork National River and Recreational Area
 - Chickamauga National Military Park
 - Stones River National Battlefield
 - Ft. Donelson National Military Park
 - Meriwether Lewis National Monument
 - Shiloh National Military Park
 - Natchez Trace National Parkway
- US Dept. of Agriculture-Forest Service
 - Cherokee National Forest
 - Land Between The Lakes National Forest
- US Dept. of Energy
 - Oak Ridge National Laboratories

Soil Conservation Districts (SCD)

The ninety-five (95) Soil Conservation Districts (SCDs) throughout the state actively support the NRCS and all of its water quality initiatives. The reuse of animal and human waste is no exception. The SCDs will assist the NRCS to make wise use of these natural resources, both in urban and rural settings. They may also form partnerships to initiate demonstration projects to further the use of these practices.

Tennessee Agricultural Production Association (TAPA)

TAPA provides outreach and education, as well as funding support. It is also a conduit for pesticide manufacturer's involvement.

TN Dept. of Agriculture-Ag. Resources Conservation Fund (TDA-ARCF)



The regional administrators with TDA-ARCF provide technical assistance in pesticide collection events, as well as providing information and outreach, logistics and project coordination.

TN Dept. of Agriculture-Regulatory Services (TDA-RS)

The TDA-RS has developed the State Pesticide Management Plan and is responsible for regulating the sale, distribution, storage, handling and use of pesticides in Tennessee. It has authority related to the prevention of pesticide contamination of Tennessee's water resources. It has also developed a pesticide recovery plan which includes: a pesticide collection program, building pesticide collection facilities, holding open houses and demonstrations for public awareness, publishing information about safe pesticide storage, handling and disposal, recycling pesticide containers and monitoring surface and groundwater to determine the extent of contamination by pesticides. The pesticide collection program and pesticide mixing facility projects were funded in part by 319 funds.

The TDA-RS works under the authority of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Tennessee Insecticide, Fungicide and Rodenticide Act (TIFRA). The Tennessee Valley Authority, EPA, and University of Tennessee Agricultural Extension Service, have assisted in developing programs for pesticide storage, mixing and collection. The TDA-RS has developed the State Pesticide Management Plan and is responsible for regulating the sale, distribution, storage, handling and use of pesticides in Tennessee. It has authority related to the prevention of pesticide contamination of Tennessee's water resources.

The mixing and storage programs include demonstration sites. The waste collection program was initiated in 1998 and will run for seven years. So far, 292,000 pounds of pesticides have been collected. In addition, pesticide container collection sites have been in place for a year. The containers will be chipped up and recycled.

The collection of unused agricultural pesticides in this program has substantially reduced the potential threat to the environment, wildlife and human health by preventing spills to surface and groundwater. Through the Household Hazardous Waste Collection program, an undetermined amount of urban pesticides have been collected, as well. And through the Nolichucky River Pesticide Awareness Project, several hundred pounds of pesticides and pesticide containers have been disposed of or recycled. The Shallow Vadose Zone and Groundwater Monitoring Project and the Constructed Wetlands for Pesticide Clean-up in Container Nurseries Project will not only help to prevent pollution at the source but will also serve as models for the future.

In addition, the model storage and mixing facilities are permanent for future collections. One of the most important contributions of the Statewide Pesticide Program may be statewide education efforts, which will serve to educate farmers and landowners about the proper storage and disposal of pesticides.



TDEC-Division of Community Assistance (TDEC-DCA)

Household pesticides and other hazardous chemicals are collected periodically at different sites in the state by TDEC-Division of Community Assistance (DCA). This effort is an attempt to properly recycle containers so they will not be discarded near water resources or disposed in landfills when recycling is more appropriate. TDEC-DCA sponsors and coordinates the Solid Waste and Household Hazardous Waste Collection Program and provides information/education materials, and offers technical assistance.

TDEC-Division of Solid Waste Management (TDEC-SWM)

In 1969, the Tennessee Solid Waste Management Act was adopted in order to initiate a comprehensive statewide program for the regulation of solid waste management. This Act has been modified and amended over the years and it, along with associated acts such as the 1991 Solid Waste Management Act and the Solid Waste Authority Act, now form the statutory framework for solid waste regulations in Tennessee. TDEC-SWM and TDEC-WPC have a Memorandum of Understanding to address sites which have adverse affects on local water quality.

TDEC-Division of Water Pollution Control (TDEC-WPC)

TDEC-WPC is the state's leading water quality monitoring agency and is responsible for preparing the 1998 303(d) List and the 305(b) Report . As TDEC-WPC discovers water quality impairments due to land disposal issues, it can alert the partnership so that remediative actions can be taken. It is also standard procedure for TDEC-WPC to treat all illegal dumpsites as point sources once discovered. It is also critical to the success of a countywide or multi-county cleanup effort to have the regional and central office staff assist the local organization in prioritizing the cleanup.

TDEC-Division of Water Supply (TDEC-DWS)

The Ground Water Management Section of TDEC's Division of Water Supply (TDEC-DWS) has been charged with the responsibility of managing the Source Water Assessment Program (SWAP). A contract has been made with the Tennessee Association of Utility Districts (TAUD) to complete a surveys along a two thousand foot wide by 5 mile long cooridor upstream of every public and private water intake in the state. Information gathered during this survey consists of any point or nonpoint sources of water pollution. This information is recorded for GIS storage and presentation and can be used by local and state groups in projects related to illegal dumpsites, abandoned landfills, failing septic systems, and incidences of improperly spread municipal and/or animal waste.

Tennessee Department of Transportation (TDOT)

TDOT's Highway Beautification Office (HBO) works to keep trash off of the state's highways with the Adopt-A-Highway program, which makes use of volunteers and the Litter Grant Program. They also plant and maintain vegetation in the medians of and along side highways and regulate junkyards along interstates, parkways and scenic highways. In addition, TDOT's HBO provides educational displays such as the "Litter Bug" (a Volkswagen filled with trash) and a walk-through recycling van (with examples of recycled products).



Tennessee Farmers Cooperative (TFC)

This organization provides public outreach and education about the proper handling of pesticides and herbicides and serves as a means for retail supplier involvement with the TDA-NPS Program.

Tennessee Golf Course Superintendent's Association (TGCSA)

Several golf courses elected to participate in the pesticide storage and collection program by building storage facilities and establishing riparian zones between the golf courses and waterbodies.

Tennessee Nurserymen's Association (TNA)

The owner of one of the largest nurseries in Tennessee, Shadow Nursery in Winchester is a member of the Tennessee Nurserymen's Association. This site contains 15 retention ponds, which collect storm water and are used for irrigation. Over 2,000 nurserymen from all over the world visit Shadow Nursery to purchase plants or discuss new developments in technology. A model site was built at this nursery and demonstrations there will serve to further promote environmental awareness among nurserymen.

Tennessee Resource Conservation and Development Districts (TN-RC&D)

The RC&Ds promote environmentally sound development in their areas and have worked with the TDA-NPS Program on many water quality projects. The RC&Ds (such as the CP-RC&D and App-RC&D, mentioned earlier in this section) are addressing the issues of solid waste disposal and recycling. They should continue to address these issues, helping to promote public awareness of waste management and recycling across the state.

Tennessee Technological University (TTU)

TTU contracted with the TDA-NPS Program to control runoff containing pesticide residues from container nurseries by using constructed wetlands. The function of the wetlands was to contain pesticides and nitrites in runoff and prevent them from infiltrating surface and groundwater. Water quality was monitored in a mock-up nursery as part of the study. This project has been implemented as a demonstration project at an actual nursery operation.

Tennessee Valley Authority (TVA)

The TVA provides funding support, assists in program development and management, and provides media and public information and education. They have also provided technical assistance in engineering, hazardous waste operations and other projects. TVA also assisted in developing contacts, selecting collection sites, developing educational materials, conducting hazardous waste handling training for TDA personnel, coordinating and providing technical oversight for collection events in the pesticide collection program.

USDA-Natural Resources Conservation Service (NRCS)

The NRCS assists TDA regional administrators in project coordination and site selection. They also provide information about pesticide collection and handling in informational brochures and on their Internet site (www.usda.nrcs.gov).



UT Institute of Agricultural (UTIA)

The UTIA has for many years recognized the fact that human waste from septic systems, in addition to animal waste, significantly contributes to the pollution of both surface and subsurface water resources across the state. APSU and UTIA worked on the Shallow Vadose Zone Project, providing technical assistance. UTIA has participated in well water monitoring at one location in Bedford County, in an effort to determine the origin of high fecal and nutrient loadings to local surface streams and subsurface aquifers.

UTIA offers the Farm*A*Syst/Home*A*Syst program to farmers and landowners to provide education about water quality protection and improvement on the farm and around the home. This program includes written materials, videos, CD-ROMs, and a web site. The Farm*A*Syst/Home*A*Syst project was funded in part by 319 funds.

UT County Technical Advisory Service (UT-CTAS)

CTAS assists county officials with programs addressing the disposal of solid waste, county-wide recycling efforts, and household or agricultural chemical disposal.

UT Municipal Technical Advisory Service (UT-MTAS)

MTAS assists local governments with solid waste issues.

OTHER FUNDING SOURCES

Inventorying, prioritizing, and cleanup of illegal dumpsites

TDA-NPS Program, through its relationship with Keep TN Beautiful and Keep America Beautiful will likely see projects similar to those previously funded be done in other parts of the state.

Local efforts are rapidly growing to contend with the problem as is exemplified by the Citizens for Lincoln County Environment and Neighborhood (CLEAN). These efforts should heighten the awareness of citizens to the importance of keeping solid waste away from waterbodies and sinkholes.

Additional funding sources for environmental projects are listed in the Catalog of Federal Funding, which can be found at: www.aspe.os.dhhs.gov/cfda

CURRENT 319 PROJECTS

Currently the TDA-NPS Program is:

- Involved in one illegal dumpsite clean-up project, while having submitted a project which should involve five counties and assist the Keep Tennessee Beautiful program,
- becoming active in illegal dumpsite remediation across the entire state
- Involved in projects which assist in the collection of used or discarded pesticied containers.

The following is a compilation of these efforts.



Grant Yr.	Project Title	Location
FY-97	C-P Illegal Dumpsites	northeast
FY-98	Statewide Collection Pesticide Containers	statewide
FY-00	Duck River: Dumpsite Inventory & Cleanup	Middle TN
FY-00	Statewide Collection of Pesticides	statewide

EDUCATION AND PUBLIC AWARENESS

The UT Institute of Agricultural (UTIA) is a prominent partner for the creation of educational brochures and the coordination of field days. These activities communicate information concerning all of the land disposal issues to state citizens. Land disposal projects possess valuable aspects, which need to be captured in some kind of educational media, such as brochures, booklets, videos, internet sites, CD-ROMs or field tours. In this manner, others can learn from the projects supported by 319 and other clean water funding programs.

AREAS FOR PROGRAM EXPANSION

Promotion of State Revolving Funds (SRF) in BMP implementation

EPA has encouraged 319 programs to use, when possible, SRF funds to address nonpoint source problems. As partners discuss solutions to land disposal problems, the SRF Program could be a source of funding for the solutions.

Collection and reuse of timber industry waste

For quite some time Tennessee has been a leader in hardwood production. Along with this has come a significant collection of refuse piles. Much of this refuse has been reused in other wood-related industries, but large amounts of refuse still remain across the state. If left exposed to the elements it can be a potential cause of water quality impairment.

Investigative studies into the reuse of these refuse piles need to be performed to learn how this material could be utilized as a beneficial natural resource, such as a soil amendment. Work with UTIA, NRCS, SCDs, among many others could result in useful information.

WATER QUALITY MONITORING & ASSESSMENT

TDEC-Division of Water Pollution Control

Currently, 319 funds are being awarded to TDEC-WPC to increase the density and coverage in their water quality monitoring scheme. As land disposal related sites are found and delineated as having water quality impairment possibilities the TDEC-WPC monitoring effort should focus on these sites to determine their effects on water quality. If it is proven that these sites do cause impairment BMP implementation should occur and follow-up monitoring should proceed to determine if this effort was sufficient in negating the original impact of the land disposal site. These efforts should be coordinated between TDEC-WPC and the implementing agency.



TDEC-Division of Water Supply

Monitoring data collected by the TDEC-DWS for the SWAP program may be utilized for assessing problems and needs in affected watersheds. Through the SWAP effort, reconnaissance surveys are completed along a two thousand foot wide by five mile corridor upstream of every public and private water intake site in the state. Information gathered during these surveys consists of any point and/or nonpoint sources of water pollution.

Groundwater Monitoring

In addition to those two agencies, groundwater monitoring has been done independently by several different organizations. Runoff from solid waste sites, pesticides applied to crops and lawns, and sludge or animal wastes applied may leach into groundwater, contaminating the water supply with nutrients, metals, bacteria and chemicals. The TDA-NPS Program monitored groundwater in two priority watersheds, Loosahatchie River/Beaver Creek and Duck River for hydrocarbons, pesticides, nutrients and bacteria during 1994-95. TDA Division of Regulatory Services also monitored groundwater for pesticides in West Tennessee. TVA, in cooperation with UTIA, monitored groundwater in the Duck River watershed for nutrients and bacteria. In addition, the USGS did an extensive groundwater monitoring of Loosahatchie River/Beaver Creek to identify levels of bacteria, nutrients and pesticides.

ENFORCEMENT MECHANISMS

Tennessee Department of Environment and Conservation is comprised of several divisions, two of which are assigned the task of regulating many land disposal activities. The following text highlights the enforcement responsibilities of these divisions.

TDEC-Division of Solid Waste Management

Solid waste regulations are enforced by TDEC-SWM via State of Tennessee Rule 1200-1-7. Regulatory efforts have proven to be quite beneficial to the quality of local surface and ground water resources. These efforts include: proper planning, use of basal liners when needed, peripheral monitoring wells, methane collection systems when feasible, pre-packing recycling sorting, standard packing and covering regulations, standard closing procedures, and post-closure monitoring.

TDEC-Division of Water Pollution Control

TDEC-WPC is also responsible for responding to public water quality complaints that could arise from land disposal activities and attempt to independently find these problems during the course of their assessment efforts. Once violations to the state's water quality law have been discovered by TDEC-WPC, enforcement procedures against the operator or landowner are enacted to remedy the problem. TDEC-WPC is responsible for enforcing water quality regulations through State of Tennessee Rule 1200-4-3 and the Tennessee Water Quality Control Act.

MEASURES OF SUCCESS

- Numbers of streams listed on the 1998 303(d) List because of landfills and other solid waste issues decrease with each subsequent list
- Number of illegal dumpsite inventory and clean-up projects increase biennially



- increase in the numbers of participants of household hazardous waste collection events
- Increase in attendance at pesticide collection events
- Increase in the distribution of educational publications, videos, CD-ROM, and internet sites relating to proper pesticide storage and disposal and proper solid waste disposal

MILESTONES

Long Term Goal 1.

Hold regularly scheduled meetings with stakeholders, to create new partnerships, to strengthen existing partnerships, and to foster greater trust, commitment and accountability.

- **Action 1:** The Land Disposal Working Group (LDWG) will meet semi-annually.
Lead: TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2001 – 2005
- **Action 2:** Increase LDWG membership by one member each year.
Lead: TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2001 – 2005
- **Action 3:** Establish the LDWG mission statement, a list of collective capabilities, and priorities for funding.
Lead Agencies: LDWG and TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2001-2005
- **Action 4:** Develop Memoranda of Agreement with key federal agencies to improve programmatic consistency.
Lead: TDA-NPS Program
Key Partners: All federal agency partners
Year(s): 2001-2005

Long Term Goal 2.

Fully implement all developed TMDLs for nonpoint sources in compliance with existing regulations, policies, or agreements by 2015.

- **Action 1:** Coordinate water quality remediation efforts between TDEC-WPC and TDA-NPS Program with the development of Land Disposal-related TMDLs, researching a unified approach in setting TMDL standards.
Lead: TDEC-WPC & TDA-NPS Program
Key partners:
Year(s): 2001
- **Action 2:** Provide information concerning TMDL development to the LDWG,

Lead: to gain their participation.
Year(s): TDA-NPS Program
2001-2005

- **Action 3:** Provide necessary input to TDEC-WPC concerning nonpoint issues on 100% of waters selected for TMDL development.

Lead: TDA-NPS Program
Year(s): 2001-2005

- **Action 4:** Create an implementation plan for any TMDL developed by TDEC-WPC involving pollutants originating from Land Disposal nonpoint sources.

Leads: TDA-NPS Program, TDEC-WPC
Key Partners: LDWG
Year(s): 2001-2005

Long Term Goal 3.

Restore all waters impaired by nonpoint sources that are listed on the 1998 303(d) List to the condition of fully supporting their designated uses by 2015, in cooperation with local, state and federal partners.

- **Action 1:** Install BMPs so that 20% of the streams impaired due to land disposal on the 1998 303(d) List will support their designated uses.

Lead: TDEC-WPC
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2005

- **Action 2:** Install BMPs so that 60% of the streams impaired due to land disposal on the 1998 303(d) List will support their designated uses.

Lead: TDEC-WPC
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2010

Long Term Goal 4.

Beginning in 2006, through regulatory and non-regulatory means, prevent previously unlisted waters from being included on the 303(d) List because of nonpoint source impairments.

- **Action 1:** Implement BMPs on streams not listed on the 1998 303(d) List

Lead: LDWG & TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TN
Year(s): 2001-2005

- **Action 2:** Provide funding to projects that will keep waters from being 303(d) Listed due to Land Disposal.

Lead: TDA-NPS Program
Key partners: TDEC-SWM; TDEC-DCA; TDA-RS; UTIA; TDOT; KTB; KAB; TNRC&D
Year(s): 2005

Long Term Goal 5.



Improve the knowledge of stakeholders and citizens concerning the origins, magnitude, and prevention of nonpoint source pollution, and how to prevent it.

- **Action 1:** Develop and distribute educational material concerning Land Disposal issues in increasing amounts each year.
Lead: TDA-NPS Program
Key partners:
Year(s): 2001-2005
- **Action 2:** Through 319 demonstration projects across the state, encourage local entities to create projects to remediate improper Land Disposal sites which are affecting local water quality.
Lead: TDA-NPS Program
Key partners:
Year(s): 2001-2005
- **Action 3:** Participants in household hazardous waste collection events will increase each year.
Lead: TDEC-DCA
Key partners: TDEC-SWM
Year(s): 2001 – 2005
- **Action 4:** Pesticide collection events will occur in all 95 counties.
Lead: TDA-RS
Key Partners: TVA, TDA-NPS Program
Year(s): 2005
- **Action 5:** At least two model sites for the Pollution Prevention Program will be constructed.
Lead: TDA-RS; TVA
Key Partner: TDA-NPS Program
Year(s): By 2005
- **Action 6:** Provide educational information concerning Land Disposal on the TDA-NPS web page.
Lead: TDA-NPS
Year(s): 2001

Long Term Goal 6.

Through the process of continuous improvement, routinely assess all programmatic functions of the TDA-NPS Program in order to maximize efficiency, decrease the bureaucratic burden and increase the numbers of participants in the program.

- **Action 1:** Investigate other funding sources such as The Nature Conservancy, Brownfields Program, as well as EPA.
Lead: TDA-NPS Program
Key partners: The Nature Conservancy; US EPA
Year(s): 2001-2005



- **Action 2:** Provide responses to all project related inquiries from grantees within three business days of the request.
Lead: TDA-NPS Program
Year(s): 2001-2005
- **Action 3:** Work with grantees to achieve timely submittal of all progress reports 100% of the time.
Lead: TDA-NPS Program
Year(s): 2001-2005
- **Action 4:** Develop a Priority Ranking System for project review.
Lead: TDA-NPS Program
Year(s): 2001-2005
- **Action 5:** Request feedback from partners annually to assess the quality of the TDA-NPS Program
Lead: TDA-NPS Program
Year(s): 2001-2005

Long Term Goal 7

Use the maximum allowable percentage of funding annually to assist partners with water quality monitoring and assessment, for the duration of the 319 program.

See Chapter 1.9 for action items related to water quality monitoring for the TDA-NPS Program